

ENTERTAINMENT TECHNOLOGY

Two of California's premier industries -- entertainment and high technology -- combine in entertainment technology. Alone, entertainment and high technology are significant contributors to the California economy. Combined, they each add tremendous value to the other.

Entertainment technology involves the elements of television, motion pictures and video, enhanced by computers and telephony. The resulting images, sound and data are delivered by telephone lines, fiber optic cable or satellites. California is the natural place for this synergy. Around the San Francisco Bay are the high-technology centers of Silicon Valley and Multimedia Gulch. Southern California is the world leader in motion picture and television production.

Entertainment Technology. Entertainment has traditionally been allied with technology. Entertainment technology includes motion picture and video production (Standard Industrial Classification code 781); computer programming services (SIC 7371); electronic computers (SIC 3571); and semiconductor manufacturing (SIC 3674). The creative genius of Hollywood and the technological genius of Silicon Valley have combined to take advantage of expanding markets. There are new forms of high-tech entertainment delivery via satellite, cable and computer games. There are also more providers of entertainment, increasing the demand for content.

Hollywood has benefited immensely. Computer-generated images bring innovative ideas to the screen and help to control sky-rocketing production costs. Some aspects of movie production can be made more cheaply with computer-generated images; virtual sets can be built, dinosaurs can roam, and crowd scenes can be copied and pasted. Computer generated animation adds a new dimension to entertainment. This type of animation has already moved from special effects and commercials to a full-length motion picture, as seen in "Toy Story".

Silicon Valley technology has also benefited from the special effect requirements of Hollywood, as computer programmers are pushed to new levels of sophistication. Demand has also increased for the production of computer hardware and software that create special effects. Silicon Valley turns to Hollywood for story lines, art direction and set designs for computer and video games. The two areas are benefiting from the creativity of the other, forming what some call "Siliwood".

Mountain View-based Silicon Graphics, Inc. is an example of an entertainment technology company. Silicon Graphics makes computer systems for technical, scientific and creative professionals. Among their products is software that can create motion picture special effects. Silicon Graphics has even set up "Silicon Studio" to provide classes to people who wish to learn and perfect special effect applications.

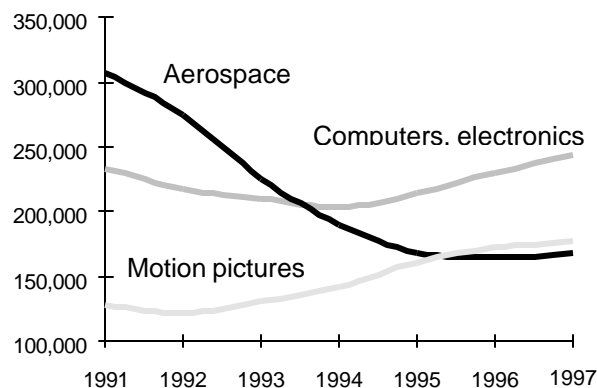
Multimedia. Multimedia firms use the same elements as entertainment technology firms. The applications for multimedia range from in-home computer games to the transfer of medical information over distances. Everyone with a CD-ROM computer game or access to the Internet is enjoying the benefits of multimedia. Movie producers use multimedia capabilities to create computer-generated special effects. Doctors in remote areas of the nation use multimedia to send interactive video via satellite and microwave transmission to medical specialists in urban areas. Multimedia allows real time images of news events to be beamed into the home from countries around the world. Teleconferencing using multimedia allows colleagues in far-flung locations to meet without leaving their offices. According to the Carronade Group Multimedia Directory, California has over 630 multimedia companies.

Employment and wages. The state has a huge proportion of the nation's entertainment technology components. California has over half of the nation's employment in motion picture production and about a quarter of the computer and semiconductor manufacturing. Computer programming services in California account for 11 percent of the national total.

The high-skill, high-wage jobs of entertainment technology continued to grow. The number of these new jobs in the economy replaced many of the jobs lost in the manufacturing of aircraft, missiles, and space vehicles. There are now more jobs in motion picture production than aerospace production. See the graph below.

The California motion picture industry is booming, and continues to produce more than half of the national film starts. Motion picture production had over 177,000 direct jobs in 1997. Thousands more indirect jobs are provided to the motion picture industry through related business services ranging from carpentry to special effects.

**Employment in Aerospace
and Entertainment Technology**



Entertainment technology jobs typically pay above-average wages. There is a high demand and low supply of people with the combined skills of computer literacy and entertainment creativity to meet the requirements of the industry. People with these specialized skills can expect jobs paying around \$75,000. Motion picture production in California pays a statewide average annual wage of approximately \$67,700.

Mergers of entertainment and technology firms. Several major entertainment firms merged in the 1990s. The mergers created or expanded distribution channels for company products. The *Los Angeles Times* published a list of the biggest media company mergers in the 1990s. The mergers included the acquisitions of Cap Cities/ABC by Walt Disney Co. in 1996, MCA by Seagram Co. in 1995, and Paramount and Blockbuster by Viacom in 1994.

Although not all mergers were with California companies, the merged companies require more entertainment product. The product is largely created in the state, resulting in more business for California's thriving industry of entertainment technology.

Additional benefits The growth in entertainment technology benefits other areas of the economy. Electronic entertainment, such as video and computer games, is part of California's leading export industry of electronics and electrical equipment.

Entertainment technology benefits from the in-state facilities for the manufacture and launch of satellites. The satellite industry itself is expanding to meet the relentless demand by broadcast TV with bigger, more powerful satellites. Satellites are used mostly for video transmission, including regular TV broadcasts, cable TV, the transmission of video feeds between studios, and by camera crews in the field. For the top 35 commercial satellite operators worldwide, 58 percent of revenues are derived from broadcast.

Regional real estate and construction have also been given a boost. The record levels of venture capital investment (a third of which goes to California), assures the creation of new firms, particularly high technology industries.

Entertainment technology is a vital and thriving showcase of California's strongest activities — motion picture production, computers and electronics, satellites and exports. Alone, and in combination, these activities have been strong contributors to the California economy. The Trade and Commerce Agency supports this vital industry through the California Film Commission, and other Agency programs. The Commission is putting a digital site location service on the Internet to allow film producers to review the extensive library of California film locations.